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AMENDMENTS TO THE DRAWINGS

Please replace Figures 1-3 (4 sheets) with the replacement sheets appended herewith. No material, new or otherwise, has been added.

Figure 4, showing an automatic fire sprinkler system of the prior art, has been added.

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REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-2 and 6-24 are pending in this application. Claims 14, and 18-19 were withdrawn by the Examiner from consideration as being drawn to a non-elected Species. Claims 1-2 and 6-24 have been rejected under § 112, second paragraph. Claims 1, 2, 6-10, 13, 15-17, and 20-24 have been rejected under § 102(b) or § 103(a). Independent claim 1 and dependent claim 2 have been amended. Claims 6-24 have been canceled. New claims 25-35 have been added.

Objections to the Drawings

The Examiner has objected to the drawings for various informalities. Claims 10-12 have been canceled.

The Applicant submits herein drawings of improved quality. No material, new or otherwise, has been added to the original figures.

New Figure 4 has been added to address the objections to the specification (see below). Figure 4 shows a conventional automatic fire sprinkler system. No new subject matter has been introduced.

Objections to the Specification

The Examiner has objected to the specification for various informalities. Specifically, the Examiner has pointed that proper antecedent basis has not been provided for various expressions used in the claims.

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Claims 6-24 have been canceled. The terms "flow-impeding element", water flow path, and specific water flow path, which are used in claims 1, 2, and some of the new claims, have been introduced or have been better defined in the amended specification.

The Applicant believes that the specification is now free from the informalities identified by the Examiner.

§ 112, Second Paragraph Rejections

The Examiner has rejected claims 1-6 under § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention, based on the lack of proper antecedent basis described hereinabove.

In view of the revised language of the specification, and in view of the canceled claims, Applicant respectfully submits that the claims are now free from the deficiencies identified by the Examiner under § 112, second paragraph.

§ 102(b) Rejections

The Examiner has rejected claims 1, 2, 6-10, 13, 15-17, 20 and 24 under § 102(b) as being anticipated by Pieczykolan (US 4553602). The Examiner's rejections are respectfully traversed. Pieczykolan discloses a sprinkler system in which the sprinklers have an on/off orifice. By sharp contrast, claim 1, as originally filed, limits the sprinkler to "an orifice being responsive to a water inlet pressure of the sprinkler". Claim 2, as originally filed, further limits the sprinkler coefficient

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("K") such that K is a function of the pressure p. In the art taught by Pieczykolan, K is a constant and is independent on pressure.

While continuing to traverse the Examiner's rejections, the Applicant has, in order to expedite the prosecution, chosen to amend claims 1 and 2, in order to clarify and emphasize the crucial distinctions between the device of the present invention and the device of the Pieczykolan patent cited by the Examiner. Specifically, claims 1 and 2 have been amended to clarify that the orifice, in being responsive to a water inlet pressure of the sprinkler, provides a plurality of open cross-sections as a function of said water inlet pressure.

Interview Summary

In an interview conducted by telephone with the Examiner on 7 November, 2005, in the presence of the inventor, Ralph M. Mehr, the arguments and amendments presented above were submitted and discussed with the Examiner. While acknowledging that the additional limitation overcomes the 102 rejection based on Pieczykolan, the Examiner articulated that it is possible to argue that claims 1 and 2, as informally amended, could be rejected under § 103(a) as being unpatentable over Pieczykolan in view of the flow-control device taught by Howat (US 3895646).

Applicant reasoned against this potential argument. In greater detail now, Applicant steadfastly maintains that:

(1) Pieczykolan teaches an automatic fire sprinkler that is, inherently, an on/off device.

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(2) In this regard, Pieczykolan is completely representative of all known, prior-art automatic fire sprinklers. This point was emphasized in the instant specification: "the K-factor in all prior art sprinklers is constant" (page 4, line 2).

(3) Until the instant invention, there existed no known motivation for having an automatic fire sprinkler that, upon activation, has a K-factor that is responsive to pressure. No deficiencies in the known types of automatic fire sprinklers had been identified that would lead one skilled in the art to conceive and implement such an automatic fire sprinkler.

It is well established that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. (ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 -- Fed. Cir. 1984). In the case at hand, the prior art applied by the Examiner contains no teaching, suggestion or incentive for combining the applied reference teachings in the manner proposed by the Examiner.

More specifically, nothing in the applied references supports the implementation of a pressure-based flow control unit within an automatic fire sprinkler system, so as to convert a conventional, automatic fire sprinkler into a fire sprinkler whose K-factor depends on the inlet water pressure.

(4) It must be emphasized that commercial automatic fire sprinkler systems were first developed over 120 years ago, and practice is widespread. The technology behind such systems is well developed and extremely mature.

Applicant has shown in the instant specification, and argued, that the cost of such fire sprinkler systems could be reduced using the inventive sprinklers, while -- at

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the same time -- improving safety and reducing damage due to fire and due to excessive use of water of prior-art systems.

In the field of automatic fire sprinkler systems, life safety, damage control, and capital expenditure are of cardinal importance. Moreover, the introduction of a flow-impeding element to an automatic fire sprinkler is inexpensive and fairly straightforward, and the technological means for doing so are widely available, and have been for close to 100 years. Hence, given the appreciable benefits of the inventive device, it would be untenable to assert that it would have been obvious to one having ordinary skill in the art to have provided the device of Pieczykolan with a flow-impeding element such as that suggested by Howat.

Rather, it can only be concluded -- as experts in the field have already articulated -- that the device represents an inventive, technological break-through in a mature, well-developed field.

New Claims

New claims 25-35 have been added. Support for new claims 25-35 is drawn, inter alia, from original claims 6, 7, 8, 13, 15, 17, and 20-24, respectfully.

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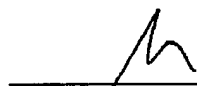
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In view of the above amendments and remarks it is respectfully submitted that independent claim 1, and hence also dependent claims 2 and 25-35, are in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,



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Date: November 10, 2005